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ABSTRACT

The phenomena of null subjects in child grammars of English are examined in the context of Nina Moss Hyams' proposals about these structures within the framework of generative grammar. Some problems with these analyses are examined and an alternative analysis is proposed. It is noted that Hyams predicts that children learning a language requiring lexical subjects will produce sentences with nonlexical subjects before they reset that parameter; two flaws in this analysis are described. An alternative account proposes that the absence of lexical subjects in early English production is not a consequence of the pro-drop parameter but the result of the inability of child grammar to case mark the subject. It is argued that the nominative case is assigned by the addition of tense but that child grammars are unspecified for tense. It is further argued that lexical subjects emerge when the child has acquired the feature of tense, and the trigger is the presence of modals in the input. (MSE)

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The Acquisition of Tense and the Emergence of Lexical Subjects in Child Grammars of English*

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1. Introduction

A number of researchers have remarked that one of the features of early English is the absence of lexical subject pronouns (Brown 1973, Bloom 1970),. In general lexical subject pronouns only appear in contexts where a null subject would be ambiguous, or to indicate emphasis, much like the adult (and child) grammars of Italian.

In this paper I look at the phenomena of null subjects in child grammars of English: in particular I will discuss the proposals in Hyams (1983,1983a), a number of problems for her analysis, and I will put forward an alternative analysis of these structures.

2. The problem and Hyams solution to it

Non-lexical subjects are a characteristic of early child grammars of English. Another characteristic of this stage is the absence of modals. Some representative samples of these early structures cited by Hyams (1983) are given in (1) to (3) below: the data are from Bloom (1970):

(1) Kathryn I

throw away	Mommy throw it away
make house	'chine make noise
helping Mommy	Lois coming

(2) Kathryn II

read bear book	Kathryn read this
sit on piano	man sit down
no want this	Kathryn want play with self

(3) Kathryn III

not making muffins	boy jumping in a bathtub
like cereal	me like coffee
go in there	food goes over there

Hyams (1983) proposes an analysis for these sentences within the framework of the theory of generative grammar - in particular the Government-Binding theory (GB) of Chomsky (1981). She assumes that certain aspects of Universal Grammar (UG) are parameterized, and that the child's first grammar will reflect the unmarked parameter. At a later point the grammar will be restructured if the language being learned has the marked parameter. In what follows I will also assume this framework without further comment, except to discuss points which directly affect Hya proposal and alternatives to it.

According to Hyams, languages which permit non-lexical pronouns in subject position (eg. Spanish and Italian) constitute the unmarked variant of the pro-drop parameter. She predicts that children learning a language which requires lexical subjects will nonetheless produce sentences with nonlexical subjects before they reset the parameter. In support of her argument she examines the child grammars of English and Italian, and demonstrates that their similarities can be accounted for by postulating that early

English is in fact, a pro-drop language, as is early and adult Italian. The trigger which causes the child to reset the parameter in English are the non-argument subjects it and there. Such expletive elements do not occur in pro-drop languages hence the child is never forced to reanalyze the input, and reset the parameter.

Under Hyams' analysis AGR=PRO in pro-drop languages. Big PRO in AGR governs the small pro appearing in the NP subject position, assigning case and agreement features to the phonetically null subject. Hyams claims that whether or not AGR=PRO in a particular language is dependent on the setting of a parameter. She further claims that AGR=PRO is the unmarked option of the parameter. This is the hypothesis which the child first posits, and then revises later if the language being learned provides counterevidence. If AGR=PRO is the unmarked case, then we would expect that early child language should be characterised by the absence of subjects even when the language being learned requires a phonetically realized subject. The data given in (1) to (3) supports this hypothesis.

Chomsky (1981:52) proposes that INFL may be either [±Tense], and that if [+Tense] is selected AGR will also be present. <2> If AGR is not present (eg. in tenseless clauses) the subject is not casemarked and PRO appears in the subject NP position. The element AGR is "basically

nominal" in character and has the features +N,-V,+INFL. AGR is the governing element which assigns case to the subject NP.

Hyams bases her analysis on Chomsky's characterization of INFL but she assumes a slightly different expansion of the INFL node. This is given in (4) where AUX dominates all elements in INFL other than AGR <3>

(4) INFL -> (AGR) AUX

AGR is present in tensed clauses and absent in tenseless clauses (infinitives and gerunds). AUX contains Tense features, and depending on properties of particular languages, lexical elements such as modals or verbs (Hyams 1983:28). She further assumes the Head Assignment Principle

(5) Where AUX contains lexical material, AUX heads INFL otherwise AGR heads

Where AUX heads INFL, nominative case is assigned to the subject NP by the [+Tense] feature contained in the modal or the raised auxilliary verb have or be. Where AGR heads INFL, nominative case is assigned by AGR, which must agree in features with the element to which it assigns nominative case. PRO is a pronominal anaphor, and must be ungoverned, i.e. it can only appear in non-casemarked position. Therefore PRO can only be present in INFL when there is no lexical material in AUX, since such lexical material would

govern PRO.

Until the child reconstructs his grammar so that AGR≠PRO, it will be impossible for him to analyze modals or the auxilliary verbs have or be. They will be "filtered out" of the grammar, only to appear when AGR≠PRO. This absence of modals and auxiliaries is a characteristic of early English. In fact the modals and the auxiliaries emerge at approximately the same time as the productive use of lexical pronoun subjects, i.e. when the pro-drop parameter has been reset. In Italian or Spanish there is no syntactic equivalent to the English modals because AGR=PRO in both child and adult grammars. Hyams claims that the triggering data which cause the parameter to be reset are the expletive pronouns it and there (neither of which is present in pro-drop languages). The child operating on the Avoid Pronoun principle does not use pronouns unless absolutely necessary.<4> His attention is drawn to the fact that expletive it is used even when there is no possibility of ambiguous interpretation, because there is no "real world" subject. This makes him realize that in the language he is acquiring it is absolutely necessary that the subject of a tensed clause be a lexical NP, and that in English AGR≠PRO.

Hyams' analysis has the advantage that a number of differences between the grammars of English and Italian can be characterized in terms of a single parameter - whether or

not AGR=PRO. It can explain why lexical subjects are compulsory in English and optional in Italian, and it also provides a unified account of the emergence of lexical subjects and modals in English. However in spite of these advantages, Hyams' proposal suffers from a number of flaws, two of which I will discuss here.

3. Some flaws in Hyams' analysis

The Head Assignment Principle as given in (5) violates X-bar theory. The version of X-Bar theory within which Hyams is working is adapted from Stowell (1981):

> ...each phrasal expansion contains a "head" term of the same feature specification eg. NP (N'') is headed by N...each head "projects into a maximal expansion (X). For example, N projects a category NP. As noted by Stowell, this principle has important implications for language acquisition since it provides the mechanism by which the child may deduce hierarchical structure from a surface string. If the child "knows" that a lexical item x is a verb, then he also "knows" that x is contained within VP.
>
> (Hyams 1983:28)

Under her analysis, the head of INFL can vary in the same language between AGR (+N,-V) and AUX (-N,+V). In other words INFL can vary between verbal and nominal properties depending on whether or not the category contains lexical material. Hyams is forced to assume the Head Assignment

Principle to explain why lexical material cannot appear under AUX when AGR=PRO, and to explain the distribution of tenseless auxiliaries and verbs in Italian.

It is true that to date all characterizations of INFL (at least those that I have seen) encounter similar problems. Pullum (1977:436) expressed it slightly differently, complaining of Aux (the forerunner of INFL) that "no auxilliary bears the "is a" relation to "Aux" in the way that a verb will bear the "is a" relation to a node labeled V." However formally requiring that the head of the category vary completely in terms of the features ±N ±V, makes the task of the language learner that much more difficult.

Another flaw in Hyams' account lies in the triggering effect of expletive it and there. Any analysis which claims that a restructuring of a grammar takes place, must explain which data causes the child to change his grammar. Hyams proposes that the child learning English is exposed to sentences like :

(8) It is raining outside

(9) There is no milk left

These data cause him to realise that even non-referential subjects must be lexical and therefore AGR≠PRO. The problem with the choice of expletive elements as a trigger is their lack of frequency in the input. It is hard to see why they

in themselves would force the child to revise his grammar.

In general, all 'triggers' are problematical in the sense that we cannot explain why the child suddenly pays attention to data that to this point had been filtered out by his grammar. However, at the very least we would assume that the triggering data should be plentiful in the child's environment, and the expletive elements do not meet this criterion. In fact there is an alternative 'trigger' available to the child, which is very common in everyday speech, and does not occur in languages which allow non-lexical subjects - the modals. The possibility will be discussed further below.

4. An alternative account of null subjects in Early English

I will propose here that the absence of lexical subjects in early English is not a consequence of the pro-drop parameter, but the result of the inability of child grammars to case mark the subject. I will argue that nominative case is assigned not by AGR but by [+Tense] and that child grammars are unspecified for tense. Lexical subjects emerge when the child has acquired the feature [+Tense], and the trigger is the presence of modals in the input.

Hyams argues that small pro occurs in subject position

in languages which have rich inflectional systems, licensed by AGR=PRO in INFL. Both Spanish and Italian are characterized by a rich verbal morphology which overtly agrees with the subject NP for person and number. Such verbal systems clearly motivate the postulation of a node AGR under INFL giving the subject person and number features. English however has a relatively 'poor' system of verbal morphology. The suffix -ed is generally assumed to be a marker of [+Tense] rather than a marker of AGR. In fact the only possible candidate for the overt realization of AGR is the marker -s which occurs with the third person singular in the present tense. However, it has been argued by Picallo (1983) and by Hyams herself that -s is also a marker of [+Tense] rather than AGR. They base this claim on the impossibility of -s in subjunctive clauses, which are specified as [+AG],[-Tense] <5>. If -s is a marker of AGR then we would expect it to be present in these clauses. However (6b) and (7b) are not grammatical:

(6a) I demand that he leave at once

(6b) *I demand that he leaves at once

(7a) I require that the student hand in his homework on time

(7b) *I require that the student hands in his homework on time

Following the proposals of Stowell (1981), and Chomsky

(1980), I will assume that nominative case is assigned to the subject NP by [+Tense] in INFL. More recently Chomsky (1981, 1982), and others, including Hyams, have claimed that AGR is the case assigning element in INFL. Seeing that under these analyses AGR is present only when INFL is [+Tense], the assumption that nominative case is assigned by [+Tense] does not affect the distribution of empty categories. In tenseless clauses the subject is PRO by virtue of the fact that PRO must be ungoverned, and the Case Filter blocks the appearance of a lexical NP which is unspecified for case at S-structure. PRO appears in the following constructions in the adult grammar:

(10) John tried PRO to leave
(11) It is difficult to know what PRO to do

I shall now present some evidence that child grammars of English are unspecified for [+Tense], until the stage when lexical subjects, modals, and the endings -s and -ed first appear.

Hyams notes that children acquiring Italian use verbal morphology appropriately at a very early age. Sentences such as those given below are among the first verbal forms used by the children Hyams recorded. The children were all under 2.3 years of age:

(12)	leggiamo il libro	'(We) read the book'
	Mangiano la ciccia	'(They) eat meat'
	Io vado fuori	'I go out'
	Sono giu	'I am downstairs'

In contrast children acquiring English do not attach -s or -ed to the verb until considerably later. In the case of the three children studied by Brown (1973), these morphemes emerged at 2.6, 2.2-2.3, and 3.8-4.0 years of age. Hyams claims that this difference could be due to the "poor" morphology of English. There is so little verbal morphology in English, that the child does not notice it until quite late in the acquisition sequence. Another possible explanation is that there is an acquisition sequence whereby the child masters the overt markings of AGR before tense.

We have already claimed that [+Tense] assigns case in English. If we further claim that in the early stages of child language the grammar is not specified for [+Tense], then this difference between the morphology of early grammars of English and Italian is explained. Furthermore, the emergence of modals, -ed, -s and lexical subjects at approximately the same stage can be explained in terms of the restructuring of the grammar to allow for [+Tense] to appear in INFL.<6> Before this occurrs the modals are not interpretable, they only occur in tensed clauses , i.e. when INFL contains [+Tense], so they are filtered out of the data until the stage when INFL becomes marked for tense. In fact a stronger claim can be made, that the presence of modals in

the incoming data would be sufficient to trigger the restructuring of the grammar. They are very common in everyday speech, and this in itself could force the child to restructure his grammar to accommodate them. Furthermore, according to Newport, Gleitman and Gleitman (1977), they are one of the few structures where maternal input has an effect. Mothers who ask lots of 'yes/no' questions expose their children to modals in a 'subject' position (i.e. sentence initial) where it may be harder to ignore them. <7> Until this happens it will be impossible for lexical NPs to occur in subject position. The Case filter requires all lexical NPs to be casemarked, if [+Tense] is the nominative case marker, then it is impossible for a grammar without [+Tense] to assign nominative case. Therefore, the only possible NP to appear in this non-casemarked position is PRO.

Evidence from Italian child language supports the claim that child grammars are not positively specified for tense. In the case of adult grammars of Italian, the inflectional endings are an instantiation of both AGR and [+Tense]. Hyams points out that there is no evidence to suggest that in the grammar of early Italian the verbal endings indicate anything other than AGR. The first productive use of past tense inflections in the language of Italian children occurs around age 3.00.

The analysis proposed here makes the claim that

children acquiring English do not case mark the subject NP until they acquire the feature [+Tense]. When they have acquired this they begin to produce tensed sentences containing modals and auxiliaries and the verbal endings -s and -ed. There is a potential problem for this claim, and this lies in the optionality of lexical subjects in child grammars. Under the account just presented, the absence of lexical subjects can be accounted for by the inability of the grammar to assign case to the subject. However the existence of sentences like (13) and (14) at the very early stages of acquisition undermines this claim since no lexical subjects should occur i.e. the claim affects full NPs as well as pronouns:

(13) Doggie fix it

(14) No Mommy giving baby milk

Gruber (1967) proposes an analysis for these sentences which appeared in the speech of a two year old child called "Mackie". He claims the words Doggie and Mommy are not in subject position at all but they are in topic position, (outside of S but within S'). At the same stage as these sentences occurred, Mackie was producing sentences with neither a subject nor a topic NP, and also sentences where the topic NP bore the objective casemarking.

(15) Him bear
(16) Me no bear

According to Gruber, (15) and (16) are analogous to adult structures like (17) and (18), where there is an NP in topic position with objective casemarking:

(17) Me, I like Harry
(18) Dinah, she is a cute dog.

In adult grammars it is impossible to topicalize expletive it and there, and as mentioned above these forms do not appear to be produced at all by children at this stage.

A problem which still remains for the analysis advanced here is why the pronouns I, she, he, we, and they can appear in the sentences like (19) and (20)

(19) I see Kathryn in mirror
(20) I find it

These sentences were produced by two children, Kathryn and Eric (Bloom 1970) who were still producing nonlexical subjects. It is not likely that they were topics, as there is no evidence of a pause between I and the rest of the sentence. In the adult grammar pronouns which are casemarked as subjects do not normally appear in topic position, so there is no evidence to suggest that they must be so considered in that of the child either. It is true that their appearance is limited in the early stages, when sentences with full lexical NPs and pronouns with object

marking occur frequently, but before the modals and tense markers appear. It has been suggested by other researchers that children operate with more than one grammar, the 'outgoing G1' and the 'incoming G2'. For the moment I can only suggest that this appearance of subject marked NPs may be an instance of the child's "vacillating" between two grammars.

5. Conclusion

It seems then that an analysis of the data given in (1) to (3) does not require that AGR=PRO in early English. An account of these data has been presented which does not refer to the pro-drop parameter at all, and is consistent with the observation that nominative case is assigned by [+Tense] in English. Child grammars lack this feature, therfore they cannot allow lexical subjects. Modals, the auxiliary verbs, and tense markers all emerge at the same time as a result of [+Tense] appearing under INFL. Nouns and pronouns bearing object casemarking can appear in topic position, and those instances where the subject position appears to be filled by a subject pronoun, are instances where the child is in the process of restructuring his grammar.

Notes

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<1> Hyams' proposals are intended to describe and explain the differences between the grammars of English and Italian with respect to the pro-drop parameter. The analysis also explains certain aspects of language acquisition in both languages. In this paper I restrict myself to examining her proposals only as they bear on the acquisition of English.

<2> It is unclear whether [±Tense] is a feature like ±Wh, or a constituent of INFL. I assume the latter, as was the case in earlier versions of generative grammar.

<3> Hyams refers to the agreement element in INFL as AG, I chose to follow Chomsky's AGR for the sake of consistency.

<4> The Avoid Pronoun Principle, a principle which is not "strictly grammatical", requires that lexical pronouns be avoided unless necessary for extragrammatical reasons, i.e., emphasis etc.

<5> I must admit that in my dialect "I demand that he leaves at once" is quite acceptable, however it is not altogether clear to me if the subjunctive sentences are really [-Tense] .

<6> Brown (1973) in his study of the acquisition of grammatical morphemes finds that modals emerge at 9.6, and -s and -d emerge at 9.00 and 9.6 respectively.

<7> I am grateful to Lydia White for drawing this to my attention.

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